

B2
6 47

each of said key tops are bowl-shaped;
each of said extruding parts are arranged inside one of said bowl-shaped key tops and have a portion extending away from a respective said key top.

26. (New) A key switch in accordance with claim 8, wherein:

each of said extruding parts has a connection to a respective said key top formed by molding said each extruding part in said respective key top.

REMARKS

The claims have been amended to improve the style of this application. Applicant thanks the Examiner for the detailed response to Applicant's last Amendment in the parent application.

With this Amendment Applicant is submitting a sample of the present invention to give the Examiner an easier understanding of the invention, and to further highlight how the U-shaped member is in a plane that is parallel to a plane of the keytops.

This detailed response indicates that Kenmochi shows a U-shaped bridging member 1C being parallel to the plane of the keytops. The Advisory Action indicates that this is shown in Figs. 4A, 8A and 8B of Kenmochi.

Applicant has reviewed Figs. 4A, 8A and 8B of Kenmochi, and is unsure where the rejection feels that the plane of the U-shaped bridging member is located, and where the plane of the keytops is located. Applicant notes that if the U-shaped bridging member is shown in

Kenmochi by elements 1B, 1C and 1A, then it would appear that the U-shaped bridging member in Kenmochi is arranged in a plane which is parallel to the drawing sheet. If the plurality of keytops in Kenmochi were also arranged in a plane parallel to the drawing sheet, then there would need to be keytops arranged above and below, and to the right and left sides of element 2 in Fig. 4A. Furthermore, there could be no keytops arranged further into the paper or further out of the paper in Fig. 4A. Applicant's review of Kenmochi does not find any teaching or suggestion of keytops above and below element 2 in Fig. 4A. Applicant notes that such an arrangement of keytops would render Kenmochi inoperable for its desired purpose. Therefore it is Applicant's position that Kenmochi does not describe a U-shaped bridging member being parallel to a plane of a plurality of keytops.

Kenmochi describes element 1 as being a keypad. It appears from Fig. 4A of Kenmochi, that if Kenmochi were to have a plurality of keys, they would be arranged on the right and left side of element 2, and into and out of the drawing sheet. This would provide a keytop plane which was perpendicular to the plane of the drawing sheet of Fig. 4A. Elements 1B, 1C and 1A of Kenmochi are then equated with the U-shaped bridging member of the present invention, it is quite clear that elements 1B, 1C and 1A do not form a U-shape which is in a plane that is perpendicular to the plane of the drawing sheet. Therefore it is Applicant's position that any U-shape in Kenmochi is not in the same plane as a plane of a plurality of keytops.

Claim 12 depends from claim 11 and further sets forth that a U-shape of the U-shaped bridging member is arranged in the bridge plane. Applicant notes that a U-shape has a base and legs, and therefore if a U-shape is in a plane, the base and the legs are in that same plane. From

Applicant's review of elements 1b, 1c and 1a, in Kenmochi, Applicant does not find any teaching nor suggestion of a U-shape of elements 1b, 1c and 1a to be in a bridge plane, especially a bridge plane which is substantially parallel to a key plane. Claim 12 therefore further defines over Kenmochi.

Claim 11 sets forth a plurality of extruded parts formed integrally with the plurality of key tops. Claim 13 depends from claim 11 and sets forth that ends of the legs of the U-shape are connected to the extruded parts. Applicant's review of element 1c in Kenmochi, does not find ends of legs of any U-shape connected to extruded parts which are integral with key tops. Instead it appears that any legs of element 1c of Kenmochi are either part of element 1b or part of element 1a. Element 1b is clearly not a key top. If element 1b is equated with a leg of a U-shape, then element 1b is not connected to a key top. It appears that only a base of any U-shape of element 1c would be connected to a key top. Is element 1a of Kenmochi considered a leg or a key top? If it is a key top, then there is no leg in Kenmochi. If element 1a is considered a leg, then there is no key top connected to an end of the leg. Since Kenmochi does not teach nor suggest ends of legs of element 1c being connected to key tops, element 1c therefore does not have all of the features of the U-shaped bridging member of the present claims. Claim 13 therefore further defines over Kenmochi.

Claim 14 sets forth that the U-shaped bridging member connects two extruded parts. Applicant notes that element 1c of Kenmochi does not connect two extruded parts, especially not two extruded parts which are integral with key tops. Instead it appears that element 1c of Kenmochi connects to element 1b which is not described as a key top, but instead is described

as a non-operating portion. Since element 1c of Kenmochi does not connect two extruded parts, especially extruded parts integrally formed with a key top, claim 14 therefore further defines over Kenmochi.

Claim 15 sets forth a type of connection between the extruded parts and the bridging member. In particular the connection between the extruded parts and the bridging member is a connection that is formed by injection molding thermoplastic elastomer. The process of injection molding thermoplastic elastomer forms a specific type of connection between the extruded parts and the bridging member. It is this type of connection that Applicant is seeking patent protection for in claim 15.

The rejection states that a method step recitation in the article claimed does not carry any patentable weight. Applicant notes the method step recitation in claim 15 sets forth a specific type of structure, namely a specific type of connection. Therefore even if the method step is not given any patentable weight, the resulting structure of the connection formed by the method step should be considered.

Applicant also wishes to point out, that to the extent any process limitations distinguish a product over the prior art, such process limitations must be given the same consideration as traditional product characteristics. In the present case, Applicant has highlighted a specific type of structural connection between the extruded parts and the bridging member. These features of the invention (whether categorized as process or structure), must be considered. See *In Re Luck and Gainer*, 476 F. 2d 650, 177 USPQ 523 (CCPA 1973).

Applicant has reviewed Kenmochi, and finds no teaching nor suggestion of extruded

parts and a bridging member which is integrated with a key top by injection molding a thermoplastic elastomer. Applicant notes that the abstract of Kenmochi indicates that an operating portion made of thermoplastic elastomer is fixed to the underside of the key top by means of a transparent adhesive. Therefore the connection between the extruded parts and the key tops of claim 15 is a much different type of connection than between an operating portion and a key top in Kenmochi. Since the structural relationship between the extruded parts and the key tops in claim 15 is different from the relationship of the operating portion and the key top of Kenmochi, claim 15 sets forth structure which is not anticipated by Kenmochi. Claim 15 therefore further defines over Kenmochi.

With this Amendment Applicant has added new claims which set forth a type of connection between the extruded parts and the keytops. In the embodiment of Fig. 1, the keytop is represented by reference 1, and the extruding or extruded part is represented by reference 2. These claims set forth the connection as being formed by molding each extruded part in the respective keytop. Applicant notes that the molding of the extruded part in the keytop forms a special connection which is a molded type connection. Kenmochi does not teach nor suggest this type of connection, and therefore these claims further define over Kenmochi.

Claims 17, 22 and 25 set forth that the keytops are bowl-shaped. As one can see from the embodiment of present Fig. 1, the keytop 1 has the shape of an upside down bowl. These claims also set forth that the extruded parts are arranged inside the bowl shaped keytop. Again from the present Fig. 1, the extruded part 2 is clearly seen arranged inside the bowl shape of the

keytop 1. Applicant finds no teaching nor suggestion in the prior art of a bowl shape keytop, and an extruded part arranged in the bowl shaped keytop. These claims therefore further define over the prior art.

Independent claim 7 also sets forth a plurality of extruding parts where the extruding parts are formed integrally with the plurality of key tops. Claim 7 then sets forth a U-shaped bridging member integrally linking the extruding parts.

Applicant has reviewed Kenmochi, and notes that element 1c of Kenmochi does not integrally link extruding parts which are formed integrally with a plurality of key tops. Instead element 1c of Kenmochi appears to link operating portion 1a and non-operating portion 1d. Applicant notes that non-operating portion 1b is not formed integrally with a key top. Therefore element 1c of Kenmochi does not anticipate all of the features of the U-shaped bridging member set forth in claim 7. Claim 7 therefore also defines over Kenmochi.

Independent claim 8 also sets forth extruding parts integrally formed with key tops and where the extruding parts are integrally linked by a U-shaped bridging member. As described above, element 1c of Kenmochi does not link extruding parts which are integrally formed with key tops. Therefore Kenmochi does not anticipate all of the features of the U-shaped bridging member of claim 8. Claim 8 therefore also defines over Kenmochi.

Claims 9, 10 and 13 set forth that a back of the U-shaped bridging member or the base of the U-shaped bridging member is connected to a housing. Applicant has reviewed element 1c of Kenmochi, and finds no teaching nor suggestion that a base or a back of any U-shape formed by element 1c is connected or attached to a housing. Claims 9, 10 and 13 therefore

further define over Kenmochi.

Kenmochi relates to a different field or problem than the present invention. Applicant notes that in Kenmochi, since the non-operating portion is formed around the outer periphery of the operating portion through thin skirt portions, intervals between the key tops cannot be narrowed, and miniaturization of the key pad is limited. The requirement in Kenmochi for the non-operating portion and the skirt to be around the keys, limits how close together a plurality of keys can be arranged. It appears that Kenmochi is not concerned with miniaturization of a plurality of keys, or even of providing a plurality of keys. Therefore Kenmochi leads a person of ordinary skill in the art towards applications where miniaturization is not desired, or only one key is desired.

The present invention on the other hand relates to applications where a plurality of keys are desired, and it is desired that those plurality of keys be spaced very close to each other. With the U-shaped bridging member of the present invention, it is possible to have a plurality of keys, and to have those keys be spaced very close to each other. Furthermore, all of this is possible without the pressing of one key causing activation of adjacent keys.

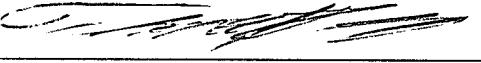
Also by the present invention connecting the key tops with the extruded parts by injection molding, a very efficient and reliable connection is formed. In Kenmochi, as described in the background portion of the present specification, the key top and key pad are separately formed and then bonded to each other by means of adhesive. Therefore, the key tops are fixed, one-by-one to the key pads by means of the adhesives. Such a manufacture of a switch requires much time and trouble in Kenmochi. The present invention is an improvement over Kenmochi,

in that an easier connection is formed. It is Applicant's position that the present invention is an improvement over Kenmochi because the present invention is easier to form and can be miniaturized, and therefore worthy of patent protection.

If the Examiner has any comments or suggestions which would further favorable prosecution of this application, the Examiner is invited to contact Applicant's representative by telephone to discuss possible changes.

At this time Applicant respectfully requests reconsideration of this application, and based on the above amendments and remarks, respectfully solicits allowance of this application.

Respectfully submitted
for Applicant,

By: 

Theobald Dengler
Registration No. 34,575
McGLEY AND TUTTLE, P.C.

TD:tf

70356RCE.1

Enclosed: Sample

DATED: June 11, 2003
SCARBOROUGH STATION
SCARBOROUGH, NEW YORK 10510-0827
(914) 941-5600

SHOULD ANY OTHER FEE BE REQUIRED, THE PATENT AND TRADEMARK OFFICE IS HEREBY REQUESTED TO CHARGE SUCH FEE TO OUR DEPOSIT ACCOUNT 13-0410.

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE UNITED STATES POSTAL SERVICE AS EXPRESS MAIL IN AN ENVELOPE ADDRESSED TO: COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA. 22313-1450, NO.: EV323629013US

McGLEW AND TUTTLE, P.C.
SCARBOROUGH STATION, SCARBOROUGH, NY 10510-0827

BY: Joni Ann Forte DATE: June 11, 2003